Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (Currently Amended) A method of adjusting the spectral response of an optical grating, the method comprising:

attaching an optical grating to a support member, wherein the optical grating has a length extending between a first end of the optical grating and a second end of the optical grating and wherein the optical grating is spaced from a centroidal axis of the support member; and

applying bending moments at two or more locations on the support member to bend the optical grating in at least a transverse direction to create an axial strain profile along the length of optical grating and thereby altering the spectral response of the optical grating.

Claim 2. (Original) The method of claim 1, wherein the optical grating comprises an optical grating selected from the group consisting essentially of: fiber Bragg gratings and long period gratings.

Claim 3. (Original) The method of claim 1, wherein attaching the optical grating to a support member comprises attaching the optical grating along the entire length of the grating.

Claim 4. (Original) The method of claim 1, wherein altering the spectral response of the optical grating comprises uniformly shifting the spectral response of the optical grating.

Claim 5. (Original) The method of claim 1, wherein altering the spectral response of the optical grating comprises altering the chromatic dispersion of the optical grating.

Claim 6. (Original) The method of claim 1, altering the spectral response of the optical grating comprises changing the bandwidth of the optical grating.

Claim 7. (Original) The method of claim 1, wherein altering the spectral response of the optical grating comprises changing the center wavelength and the chromatic dispersion of the optical grating.

Claim 8. (Original) The method of claim 1 wherein applying bending moments at two or more locations on the support member comprises applying at least one bending moment at a location positioned between the first and second ends of the optical grating.

Claim 9. (Original) The method of claim 1, wherein altering the spectral response of the optical grating comprises altering the spectral response of a selected portion of the length of the optical grating.

Claim 10. (Original) The method of claim 9, wherein altering the spectral response of a selected portion of the length of the optical grating comprises altering the spectral response of less than the entire length of the optical grating.

Claim 11. (Original) The method of claim 9 wherein the support member has a uniform cross-section along the selected portion of the length of the optical grating having an altered spectral response.

Claim 12. (Original) The method of claim 1, wherein the support member is asymmetric about its neutral axis, and wherein attaching the optical grating to the support member comprises attaching the optical grating to a support member region most distant from the neutral axis.

Claim 13. (Original) The method of claim 1, further comprising adjusting at least one bending moment to adjust the spectral response of the optical grating.

Claim 14. (Original) The method of claim 13, wherein adjusting at least one bending moment comprises adjusting the location of the at least one bending moment to adjust the spectral response of the optical grating.

Claim 15. (Original) The method of claim 13, wherein adjusting at least one bending moment comprises adjusting the magnitude of the at least one bending moment.

Claim 16. (Original) The method of claim 1, wherein the bending moments are applied to alter the spectral response of the optical grating about a selected single channel of a plurality of optical wavelength channels within the operating band of the optical grating.

Claim 17. (Original) The method of claim 9, wherein applying bending moments comprises applying bending moments adjacent both ends of the selected portion of the length of the optical grating, wherein at least one bending moment is applied between the first end and the second end of the optical grating.

Claim 18. (Original) The method of claim 1, further comprising axially compressing the optical grating prior to applying bending moments at two or more locations on the support member.

Claim 19. (Original) The method of claim 1, wherein the optical grating is parallel to the centroidal axis of the support member.

Claim 20. (Original) The method of claim 1, wherein applying bending moments at two or more locations on the support member selects a wavelength in the optical grating adjacent each of the two or more locations.

Claim 21. (Currently Amended) An apparatus for use with a broadband wavelength division multiplexed (WDM) optical communication system having a plurality of optical wavelength channels, the apparatus comprising:

a support member to which a chirped broadband optical grating can be attached; and

a mechanism for adjusting the chromatic dispersion of a selected single channel of the plurality of channels within the operating band of the optical grating, said mechanism for adjusting being adapted to apply bending moments at two or more locations on the support member to bend the optical grating in at least a transverse direction.

Claim 22. (Currently Amended) The apparatus of claim 21, wherein the mechanism for adjusting comprises ~~a support member attached to the optical grating, and~~ a bending moment applicator for applying two bending moments to the support member.

Claim 23. (Original) The apparatus of claim 22, wherein the bending moment applicator is moveable with respect to the support member.

Claim 24. (Original) The apparatus of claim 22, wherein the bending moment applicator is configured to apply the two bending moments to the support member separated by a distance less than a length of the chirped optical grating.

Claim 25. (Original) The apparatus of claim 22, wherein the support member attached to the optical grating axially compresses the optical grating.

Claim 26. (Original) The apparatus of claim 22 wherein the support member is formed of a material having a coefficient of thermal expansion below 5 ppm/C°.

Claim 27. (Original) The apparatus of claim 22 wherein the support member is formed of a material selected from the group consisting essentially of: graphite and composites thereof, INVAR metal alloy and composites thereof, and KOVAR metal alloy and composites thereof.

Claim 28. (Original) The apparatus of claim 21, wherein the optical grating is subjected to a compressive axial preload.

Claim 29. (Original) The apparatus of claim 21, wherein the optical grating has a length of 100 mm or greater.

Claim 30. (Original) The apparatus of claim 29, wherein the optical grating has a length of 1 m or greater.

Claim 31. (Currently Amended) An apparatus for adjusting the spectral response of a selected channel within a broadband fiber Bragg grating, the apparatus comprising:

a grating support member to which a chirped fiber Bragg grating can be attached;

a mechanism for applying at least two bending moments to the grating support member to bend the support member in at least a transverse direction, the at least two bending moments separated by a distance less than a length of an attached grating.

Claim 32. (Original) The apparatus of claim 31 wherein the mechanism is positioned adjacent a selected location on an attached grating corresponding to the selected channel, such that the selected location is located between the two bending moments, whereby the spectral response of the selected channel can be adjusted by altering the bending moments.

Claim 33. (Currently Amended) A method for adjusting the spectral response of a broadband wavelength division multiplexed (WDM) optical communication system having a plurality of optical wavelength channels, the method comprising:

providing a chirped broadband optical grating; and

applying at least two bending moments on opposite ends of a selected portion of the chirped optical grating to bend the optical grating in at least a transverse direction.

Claim 34. (Original) The method of claim 33, further comprising selecting one optical wavelength channel to be adjusted from the plurality of optical wavelength channels.

Claim 35. (Original) The method of claim 34, further comprising selecting the portion of the chirped optical grating corresponding to the selected optical wavelength channel.

Claim 36. (Original) The method of claim 35, further comprising adjusting the magnitude of at least one of the at least two bending moments to adjust the spectral response of the chirped optical grating.

Claim 37. (Original) The method of claim 33, further comprising axially compressing the optical grating prior to applying at least two bending moments to the optical grating.

Claim 38. (Original) The method of claim 33, further comprising positioning a bending moment applicator adjacent the selected portion of the chirped optical grating.

Claim 39. (Original) The method of claim 33, wherein the optical grating has a length of 100 mm or greater.

Claim 40. (Original) The method of claim 39, wherein the optical grating comprises has a length of 1 m or greater.